

Paper Reference 31761H

Pearson BTEC Level 3

**Nationals Certificate, Extended Certificate,
Foundation Diploma, Diploma,
Extended Diploma**

INFORMATION TECHNOLOGY

UNIT 2: CREATING SYSTEMS TO

MANAGE INFORMATION (PART A)

Wednesday 13 January 2021 – Afternoon

**Time: 3 hours plus your additional
time allowance.**

YOU MUST HAVE:

activity2.rtf,

activity3.rtf,

activity4.rtf

X67697RRA

ITEMS INCLUDED WITH QUESTION PAPER

- **Separate Data Book.**
- **Instructions to Invigilators.**
- **Instructions for Learners.**
- **Part A Set Task Brief.**

INSTRUCTIONS

- **Part A and Part B** contain the material for the completion of the set tasks under supervised conditions.
- There are 40 marks for **Part A** and 26 marks for **Part B**, giving a total mark for the set tasks of 66.
- **Part A and Part B** are specific to each series and this material must be issued only to learners who have been entered to take the tasks in the specified series.
- Learners **MUST ONLY** have access to **Part A** during this examination session.
- This booklet should be kept securely until the start of the 3 – hour (plus your additional time allowance) supervised assessment period.
- **Part B** materials **MUST NOT** be accessed during completion of **Part A**.

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Turn over

- **Part A and Part B** should be submitted together for each learner.
- This booklet should not be returned to Pearson.
- Answer all activities.

INFORMATION

- The total mark for this paper is 40.
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Part A Set Task is on the next page.

Part A SET TASK

Look at the Set Task Brief Book provided separately.

YOU ARE ADVISED TO SPEND 10 MINUTES (plus your additional time allowance) READING THE TASK SCENARIO AND THE ACTIVITIES YOU ARE TO COMPLETE.

YOU MAY MAKE NOTES AND/OR HIGHLIGHT INFORMATION TO USE IN THE COMPLETION OF THE DOCUMENTS YOU NEED TO PRODUCE FOR YOUR TASK.

YOU MUST COMPLETE ALL ACTIVITIES WITHIN THE SET TASK.

PRODUCE YOUR DOCUMENTS USING A COMPUTER.

SAVE YOUR DOCUMENTS IN YOUR FOLDER READY FOR SUBMISSION USING THE FORMATS AND NAMING CONVENTIONS INDICATED.

ACTIVITY 1: DATABASE RELATIONSHIPS

SCREENPRINT – You are advised to spend 45 minutes (plus your additional time allowance) on this activity.

Study the data extract provided in Figure 1 in the separate Data Book.

Create an efficient database structure that:

- **minimises data duplication**
- **accepts the data provided**
- **uses recognised naming conventions**
- **ensures data integrity.**

Ensure you use ALL and ONLY the fields shown in Figure 1.

Screen print your database relationships.

Save your database relationships screenprint as a PDF in your folder for submission as

**activity1_[Registration number #]_
[surname]_[first letter of first name]**

(TOTAL FOR ACTIVITY 1 = 8 MARKS)

ACTIVITY 2: TABLE STRUCTURES AND VALIDATION

– You are advised to spend 45 minutes (plus your additional time allowance) on this activity.

Create efficient table structures based on **ACTIVITY 1** and the data shown in **Figure 1**.

The table structures must use suitable validation to meet these requirements:

- a record for an artist will not save without the artist's surname present
- a record for an artist will not save without the artist's initial in the correct format
- a record will not save if a gallery is assigned an invalid gallery type
- a record will not save if the exhibition is for an invalid artist
- a record will not save if the number of days is below the accepted range
- a record will not save if the number of days is above the accepted range.

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Activity 2. continued.

Input the data given in Figure 1 into your relational database.

Evidence your table structures and validation as screenprints using the given activity2.rtf template.

Display your screenprints to show:

- **the design view of each table showing the structure, including the fields and data types**
- **validation including one suitable example for each of these:**
 - **presence check**
 - **length check**
 - **value lookup OR range check**
 - **table lookup**
 - **format check.**

**Save your evidence of the table structures as a PDF in your folder for submission as
activity2_[Registration number #]_
[surname]_[first letter of first name]**

(TOTAL FOR ACTIVITY 2 = 8 MARKS)

ACTIVITY 3: QUERIES AND REPORT – You are advised to spend 40 minutes (plus your additional time allowance) on this activity.

Queries

- (a) Create a query to display an alphabetically sorted list of commercial galleries that have exhibitions running for at least five days. It must show the gallery name, gallery type and number of days only.
- (b) The gallery earns commission for every piece of art sold:
- the basic commercial commission rate is 40%
 - the basic combo commission rate is 20%.

Create a query that will allow the user to enter a parameter value for an artist's surname when run. Calculate the:

- number of exhibitions
- predicted commission Smart Art will receive.

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Activity 3. continued.**Display:**

- the artist's surname
- the artist's initial
- the commission rate
- the predicted commission.

Evidence your queries as screenprints using the given activity3.rtf template.

Your screenprints must show:

- the **DESIGN** view of the queries specified that you have created, including fields and criteria
- the **DATASHEET** view of the queries specified that you have created.

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Activity 3. continued.

Report

- (c) Create a report that shows a list of galleries and their exhibitions.**

For each gallery, calculate:

- **the end date for each exhibition**
- **the total number of exhibitions**
- **the total number of days that exhibitions will run.**

Display:

- **a suitable report title**
- **the gallery names**
- **the start date for each exhibition**
- **the end date for each exhibition**
- **the total number of exhibitions for each gallery**
- **the total number of days that exhibitions will run in each gallery.**

The report must fit on one page.

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Activity 3. continued.

Evidence your report as screenprints using the given **activity3.rtf** template.

Your screenprints must show:

- the **DESIGN** view of the report you have created, including grouping and calculations
- the **DESIGN** view of any queries you have created and used with the report, including fields and criteria
- the **DATASHEET** view of any queries you have created and used with the report.

Save your query and report evidence as a PDF in your folder for submission as

**activity3_[Registration number #]_
[surname]_[first letter of first name]**

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Activity 3. continued.

- (d) Save your database report (not a screenprint)
as a PDF in your folder for submission as**

**activity3d_[Registration number #]_
[surname]_[first letter of first name]**

(TOTAL FOR ACTIVITY 3 = 12 MARKS)

ACTIVITY 4: STRUCTURE TESTING – You are advised to spend 20 minutes (plus your additional time allowance) on this activity.

Test the structure and the validation of your relational database using suitable test data (normal, erroneous and extreme as appropriate).

You must provide evidence of table level testing that proves:

- 1. a record for an artist will not save without the artist's surname present**
- 2. a record for an artist will not save without the artist's initial in the correct format**
- 3. a record will not save if a gallery is assigned an invalid gallery type**
- 4. a record will not save if the exhibition is for an invalid artist**
- 5. a record will not save if the number of days is below the accepted range**
- 6. a record will not save if the number of days is above the accepted range.**

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Activity 4. continued.

Complete the test log to show how you have tested the structure and validation of your database using the given activity4.rtf template.

Save your test log as a PDF in your folder for submission as

**activity4_[Registration number #]_
[surname]_[first letter of first name]**

(TOTAL FOR ACTIVITY 4 = 6 MARKS)

ACTIVITY 5: STRUCTURE EVALUATION – You are advised to spend 20 minutes (plus your additional time allowance) on this activity.

Evaluate your database structure and validation.

You should consider:

- **how well your database structure has minimised data duplication**
- **how well your database structure meets these requirements:**
 - **an exhibition runs for at least three days and no more than ten days**
 - **an exhibition is for a single artist and held in a single gallery**
 - **galleries are either combo or commercial.**

Save your evaluation as a PDF in your folder for submission as

**activity5_[Registration number #]_
[surname]_[first letter of first name]**

(TOTAL FOR ACTIVITY 5 = 6 MARKS)

TOTAL FOR PART A = 40 MARKS

END